

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P802923/WO/1	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/EP2004/002330	International filing date (day/month/year) 08.03.2004	Priority date (day/month/year) 18.03.2003
International Patent Classification (IPC) or national classification and IPC		
Applicant DAIMLERCHRYSLER AG		

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>																									
<p>4. This report contains indications relating to the following items:</p> <table><tr><td><input checked="" type="checkbox"/></td><td>Box No. I</td><td>Basis of the report</td></tr><tr><td><input type="checkbox"/></td><td>Box No. II</td><td>Priority</td></tr><tr><td><input type="checkbox"/></td><td>Box No. III</td><td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td></tr><tr><td><input type="checkbox"/></td><td>Box No. IV</td><td>Lack of unity of invention</td></tr><tr><td><input checked="" type="checkbox"/></td><td>Box No. V</td><td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td></tr><tr><td><input type="checkbox"/></td><td>Box No. VI</td><td>Certain documents cited</td></tr><tr><td><input type="checkbox"/></td><td>Box No. VII</td><td>Certain defects in the international application</td></tr><tr><td><input type="checkbox"/></td><td>Box No. VIII</td><td>Certain observations on the international application</td></tr></table>		<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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Date of submission of the demand	Date of completion of this report																								
Name and mailing address of the IPEA/EP	Authorized officer																								
Facsimile No.	Telephone No.																								

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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Box No. I

Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-15 _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- nos. 1-7 _____ as originally filed/furnished
- nos.* _____ as amended (together with any statement) under Article 19
- nos.* _____ received by this Authority on _____
- nos.* _____ received by this Authority on _____
- ☒ the drawings:
- sheets 1/1 _____ as originally filed/furnished
- sheets* _____ received by this Authority on _____
- sheets* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims		YES
	Claims	1-7	NO
Inventive step (IS)	Claims		YES
	Claims	1-7	NO
Industrial applicability (IA)	Claims	1-7	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

1. Reference is made to the following documents:

D1: WO 02/058205 A

D2: US-B1-6 248 469

D3: EP-A-1 253 656

D4: BAE B ET AL, JOURNAL OF MEMBRANE SCIENCE,
ELSEVIER SCIENTIFIC PUBL. COMPANY. AMSTERDAM, NL,
Vol. 202, No. 1-2, pages 245-252, XP004351139,
ISSN 0376-7388

2. NOVELTY

2.1 The application fails to meet the requirements of PCT Article 33(1) because the subject matter of claims 1 to 5 and 7 is not novel (PCT Article 33(2)).

2.2 Document D1 discloses the following (see page 4, line 30 to page 5, line 2, and page 6, lines 11 to 22):

A membrane for a fuel cell, composed of at least one porous non-ion-conducting material and at least one ion-conducting electrolyte which is in the pores and fills them, characterised in that:

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

- the at least one ion-conducting electrolyte is a polymeric electrolyte with a melting point or decomposition temperature that is higher than that of the porous non-ion-conducting material;
- the polymeric ion-conducting electrolyte has a melting point or decomposition temperature that is at least 15°C higher than that of the porous non-ion-conducting material;
- the porous non-ion-conducting material has a melting point in the range from 125 to 250°C;
- the porous non-ion-conducting material is an organic polymer, preferably a polyolefin, polystyrene, polyvinylidene fluoride, polysulphone, polyvinyl chloride, polyvinyl fluoride, polyamide, polyethylene terephthalate, polyoxymethylene or polycarbonate, or a mixture, copolymer or combination thereof;
- the polymeric ion-conducting electrolyte is essentially an ionomer with sulphonic acid, phosphonic acid and/or carboxylic acid groups, preferably polyperfluorocarbon sulphuric acid, sulphonated polyethylene oxide, polybenzimidazole-phosphoric acid blend, sulphonated polysulphone, sulphonated polyether sulphone, sulphonated polystyrene, sulphonated polyperfluorovinyl ether, sulphonated polyetherketone or sulphonated polyolefin, or a mixture or copolymer thereof.

Document D1 thus contains all the technical features of claims 1 to 5 and 7.

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2.3 Documents D2, D3 and D4 are also prejudicial to the novelty of claims 1 to 5 and 7.

3. Dependent claim 6 does not contain any features that meet the PCT requirements in respect of novelty or inventive step when combined with the features of any of the back-referenced claims. This is because dependent claim 6 relates to a minor structural modification to the membrane defined in claim 1, which does not go beyond what a person skilled in the art would normally do on the basis of routine considerations, especially since the resulting advantages are readily predictable (see document D1, page 6, lines 11 to 22).